



THE UNIVERSITY OF KANSAS SPACE TECHNOLOGY CENTER

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DESIGNED DATA COLLECTION WITH  
SKYLAB/EREP MICROWAVE INSTRUMENT S-193

Richard K. Moore and Fawwaz T. Ulaby  
Co-Principal Investigators

Monthly Progress Report, March 1974

Remote Sensing Laboratory  
Center for Research, Inc.  
University of Kansas

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WITH SKYLAB/EREP MICROWAVE INSTRUMENT  
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REMOTE SENSING LABORATORY

DESIGN DATA COLLECTION WITH  
SKYLAB/EREP MICROWAVE INSTRUMENT S-193

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EREP No. 549-M, March 28, 1973 to September 30, 1974  
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## DESIGN DATA COLLECTION WITH SKYLAB/EREP MICROWAVE INSTRUMENT S-193

The University of Kansas Center for Research, Inc. reports the following work performed during the period 1 March 1974 to 31 March 1974.

### 1.0 CONTINUING STUDIES

#### 1.1 (Task 2.1.1.2, 2.1.3.1, 2.1.3.2) Development of Catalogue for Radiometer Temperature Measurements Performed to Date.

Satisfactory progress was made in compilation of this catalogue.

#### 1.2 (Task 2.1.3.3) Study of Effects of Atmosphere Upon S193 Rad/Scat Measurements.

Satisfactory progress was made in compilation of this catalogue.

#### 1.3 (Task 2.1.1.5) Ground Truth Collection

Data for all U. S. continental passes received by the University of Kansas Center for Research, Inc. is being decommutated from the original packed format on computer compatible tape (As per TR-543) to a listing for qualitative examination and reformed for computational facility. Qualitative correlations with ground truth are being performed by plotting selected sample footprints on maps and examining the land-use. S-190 Photographs, so far, have been our main source of discriminating/identifying land use and/or meteorological conditions.

#### 1.4 Data Analysis

The analysis of S-193 data proceeds on tenterhooks. The problems with the production data processing algorithms have been understood and care is taken during processing to ignore data points with obvious anomalies. The major problem with the data received is that one does not know if one has accurate data (spatial location or microwave response).

Quite often the S-193 microwave response indicates a certain type of target, while the spatial location listed is quite the contrary. As an example consider the following. The radiometer temperature dropped sharply to that of a water body;\* the center of field of view indicated, however, was not close enough to a water body. The only water body shown on the map was Lake Flathead (Montana) which was about 9' due east of the footprint and considerably closer to other footprints which did not register a low radiometric temperature.

The anomalies observed in the computer-compatible tapes have already been identified to the various NASA organizations and a copy of these anomalies is included here. These are the obvious anomalies and do not include the subtle ones found by a detailed analysis of data.

## 2.0 REPORTS COMPLETED

There were no reports completed this month.

## 3.0 SPECIAL ANALYSES

There were no special analyses requested of us. We are still awaiting a decision regarding the reprocessing of data.

## 4.0 DATA RECEIVED

As per telephone call with Mr. Larry York, we have decided to use all data received at the University of Kansas for the purposes of designing a data catalogue.

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\* DOY 160, Pass 6, Track 19, Mode-CTC Rad Only Data start 15:02:53.67,  
Data Stop 15:03:12.158

AS:rh